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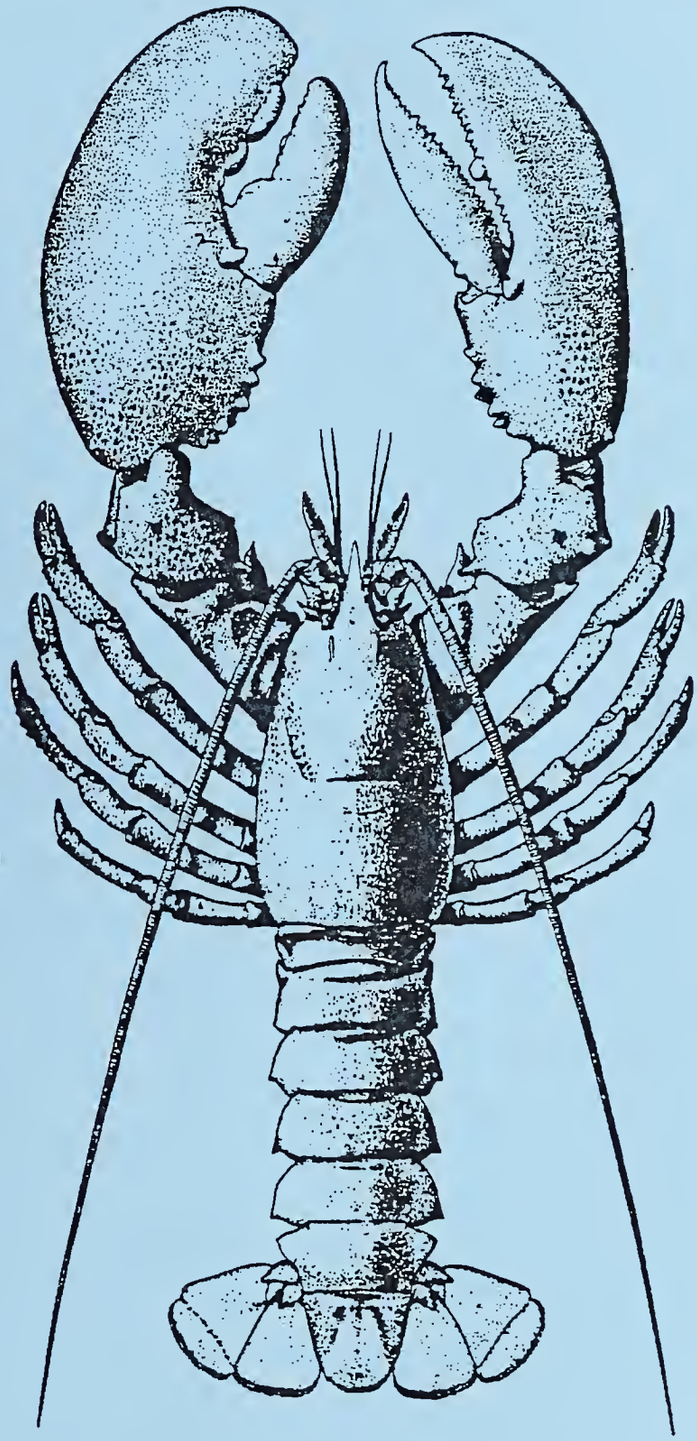
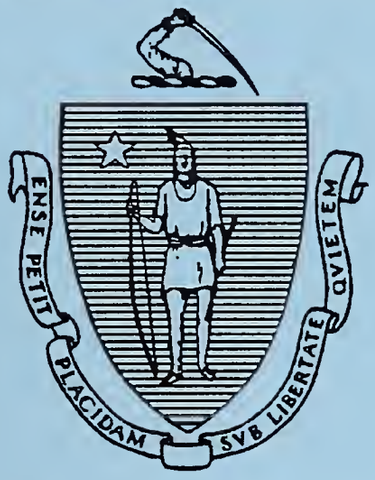
1999

Massachusetts Lobster Fishery Statistics

Holly M. McBride
Thomas B. Hoopes





MASSACHUSETTS
DIVISION OF MARINE FISHERIES

1999
MASSACHUSETTS
LOBSTER FISHERY
STATISTICS

by

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(978) 282-0308

Massachusetts Division of Marine Fisheries
Technical Report TR-2
(Lobster Statistics Publication 34)

A contribution of
Interjurisdictional Fisheries Act
(P.L.11-407) Project (NA06FI0001)

The Commonwealth of Massachusetts
Executive Office of Environmental Affairs
Bob Durand, Secretary
Department of Fisheries, Wildlife and Environmental Law Enforcement
David M. Peters, Commissioner
Division of Marine Fisheries
Paul J. Diodati, Director

INTRODUCTION

The commercial lobster fishery of Massachusetts is the most economically important fishery conducted within the territorial waters of the Commonwealth. The overall importance of the fishery both in New England and the Mid-Atlantic states, has focused the attention of federal, regional and state fishery managers on this species. In the early 1970's, in an attempt to standardize management of the fishery, the federal and state governments developed an overall lobster fishery management plan under the auspices of the State-Federal Fisheries Management Program. However, with the passage of the Magnuson Fishery Conservation and Management Act in 1976, the New England Fisheries Management Council, in cooperation with the Mid-Atlantic Council, developed and implemented a management plan for the entire Atlantic Coast lobster fishery. The basis and success of any such plan is an accurate statistical database. The Commonwealth of Massachusetts, with funding from the National Marine Fisheries Service, has been collecting annual reports from licensed lobster fishermen since the early 1960's. In the past these data were used primarily for descriptive and informational purposes, and occasionally for management. With the emphasis on Federal management, however, these data have provided the respective management agencies with the information they need to protect the interests of Massachusetts' lobstermen and ensure a productive fishery in the Commonwealth.

During the period 1975 - 1980, the number of coastal commercial lobster permits was limited by law to 1300, with an additional ten percent issued to proven hardship cases each year. In 1981, a statutory change mandated the establishment of a permanent waiting list from which 100 new permits were issued. Thirty special additional permits were also awarded to full-time commercial fishermen who met certain criteria. From 1982 to 1987, 80 list permits and 20 special additional permits were issued each year. In 1988, the issuance of new coastal permits was suspended. From 1988 to 1993, license transfers were allowed only within the immediate family, and if a license was allowed to expire, it was retired. In early 1993, a new regulation was promulgated by the DMF establishing broader eligibility criteria and new procedures for the transfer of Coastal Commercial Lobster Permits. As a result of these measures, the number of permits has declined from an all time high of 1,865 in 1988 to a more manageable 1,549 licenses today. The new system has also allowed for more orderly turnover in the industry. The new transfer procedures provide for transfer to employees (captains, deck hands, etc.) and persons on an established waiting list in addition to transfers within the immediate family. Only those licenses that have been actively fished for four out of the past five years according to catch reports filed with the Division may be transferred. The person to whom the permit is transferred must prove that he/she has at least one year of experience in the commercial lobster pot fishery or two years of experience in commercial fishing. All transferees must be owner/operators of the new business. Transfer activity for calendar year 1999 is described on Page 2.

This report is the thirty-third annual publication of data compiled from the catch reports of licensed lobster fishermen. Data were presented in a standardized format through 1979. In 1980, the presentation was enhanced as a result of improved collection and analysis methods. This publication represents the fourteenth year in which the data processing and analysis have been completely automated. Areal data presented in this report conform to the National Marine Fisheries Service statistical reporting areas. This report does not, however, cover the scope of the Project's existing database and computational capability. Requests for expanded information, or questions concerning this publication, should be directed to the Division's Statistics Project in Gloucester, MA: (978) 282-0308.

This report has been prepared by personnel of the Division of Marine Fisheries Information Systems and Fisheries Statistics Project, funded jointly by the Commonwealth and the National Marine Fisheries Service under the Interjurisdictional Fisheries Act (Public Law 11-407). The preparation of this report would not have been possible without the cooperation of licensed lobstermen who provided the information on their annual reports. Special thanks go to Ann Spires who continues, year after year, to interpret and keypunch, with special care and accuracy, the type of reports that fishermen are likely to fill out. Thanks also go to Charlie Anderson, who heads up the project, for his help with system development and upgrades and for his suggestions concerning this publication. These two people are as important to this process as we are, and without them this publication would not be possible. The authors also wish to acknowledge the assistance of Bruce Estrella from our Lobster Biology Project and Eileen Feeney and Kevin Creighton from our permitting office.

SOURCE OF DATA

"*No person may fish for or take lobster in coastal waters or land lobster in the Commonwealth without a permit issued by the Director of the Division of Marine Fisheries.*" (Chapter 130, Mass. G.L., Section 38). Chapter 130, Mass. G.L., Section 33, requires any person so licensed to file an annual report of their catch by January 31 for the preceding calendar year. In 1980, a dual reporting system was established. Commercial lobstermen (coastal, offshore and seasonal(student)) received a detailed catch report form with their license renewal application. This report requests the following information: method of fishing; number and type of gear used; effort data (set-over days, number of trips per month, etc.); pounds of lobster caught; areas fished; principal ports of landing; and information relative to the vessels and traps used in the fishery. Recreational fishermen are asked to report on their license renewal application form the number of lobsters taken during the previous year, hours dived and the maximum number of traps fished. Project personnel sort, edit, tabulate and interpret data from all reports received. Data presented in this publication are based on catch reports actually received as of April, 2001 and are not expanded to represent all of the permits issued in 1999.

COASTAL LOBSTER LICENSE TRANSFER

During 1993, the Division promulgated regulations to broaden the criteria for the transfer of a coastal lobster license from one individual to another. The intent of the new legislation was to create more options for lobstermen who wish to retire and leave this limited entry fishery. During calendar year 1999, the Division authorized the transfer of 46 coastal lobster licenses. Twenty of the transfers went to 'captains' who were previously authorized to fish another holder's license and who had fished that holder's license for at least twelve months prior to transfer. Nine transfers were allowed within the holder's immediate family (and would also have been allowed prior to the new regulation). Twelve transfers were made directly from the holder to a sternman with a documented fishing history. Nine lobstermen advertised their coastal lobster businesses to persons on a waiting list maintained by the Division and subsequently transferred their permits. Twenty-six licenses were forfeited to the Division in 1999; thirteen of these coastal lobster permits were issued directly to waiting list applicants, and the remaining thirteen licenses were permanently retired.

EXPLANATION OF TABLES

All data presented in this publication are broken down into two basic categories: the first is **"territorial"** which represents data pertaining to all lobstering activity taking place within the territorial waters (3 mile line) of the Commonwealth (Areas 1-14 on Figure 1A); the second is **"non-territorial"** which represents all data beyond those waters (Areas 15-25 on Figure 1B). In 1990, the statistical reporting map was revised to reflect the territorial / non-territorial breakdown and to conform to the National Marine Fisheries Service's statistical reporting areas. Figures 1A and 1B show the statistical reporting areas used by the Division to collect most commercial fisheries data in the Commonwealth.

Figure 1A. 1999 Massachusetts Lobster Fishery; Statistical Reporting Map Showing Territorial Waters and Outlying Areas

Division of Marine Fisheries
DIRECTOR PAUL J. DIODATI

MASS GIS — Massachusetts Geographic Information System
Massachusetts Executive Office of Environmental Affairs - 2001

Scale = 1:1,320,000

0 miles 10 20 30

Description of Boundaries for Territorial Areas

Between Areas	Boundaries
1 & 2	Castle Neck, Ipswich - Territorial Line
2 & 3	Gales Pt, Manchester - Territorial Line
3 & 4	Red Rock, Lynn - Territorial Line
4 & 5	Strawberry Pt, Cohasset - Territorial Line
5 & 6	High Pines Ledge, Plymouth - 120 Foot Line
6 & 7	Scussett Beach, Sandwich - 120 Foot Line
5, 6, 7 & 8	120 Foot Line
8 & 9	70 Degree Longitude Line
9 & 10	70 Degree Longitude Line
9 & 11	41 Degree 20 Minute Longitude Line
10 & 12	Wasque Pt, MV - Muskeget Island, Nantucket
10 & 13	Succonnesset Pt, Mashpee - Cape Pogue, MV
11 & 12	70 Degree Longitude Line
12 & 13	41 Degree 20 Minute Longitude Line
13 & 14	Elizabeth Islands and Sow & Pigs Reef to Territorial Line
14 & 15	70 Degree Longitude Line to Territorial Line

NOTE:
Parts of Area 10 (Nantucket Sound) are federal waters, but are managed by DMF.

= Territorial Waters

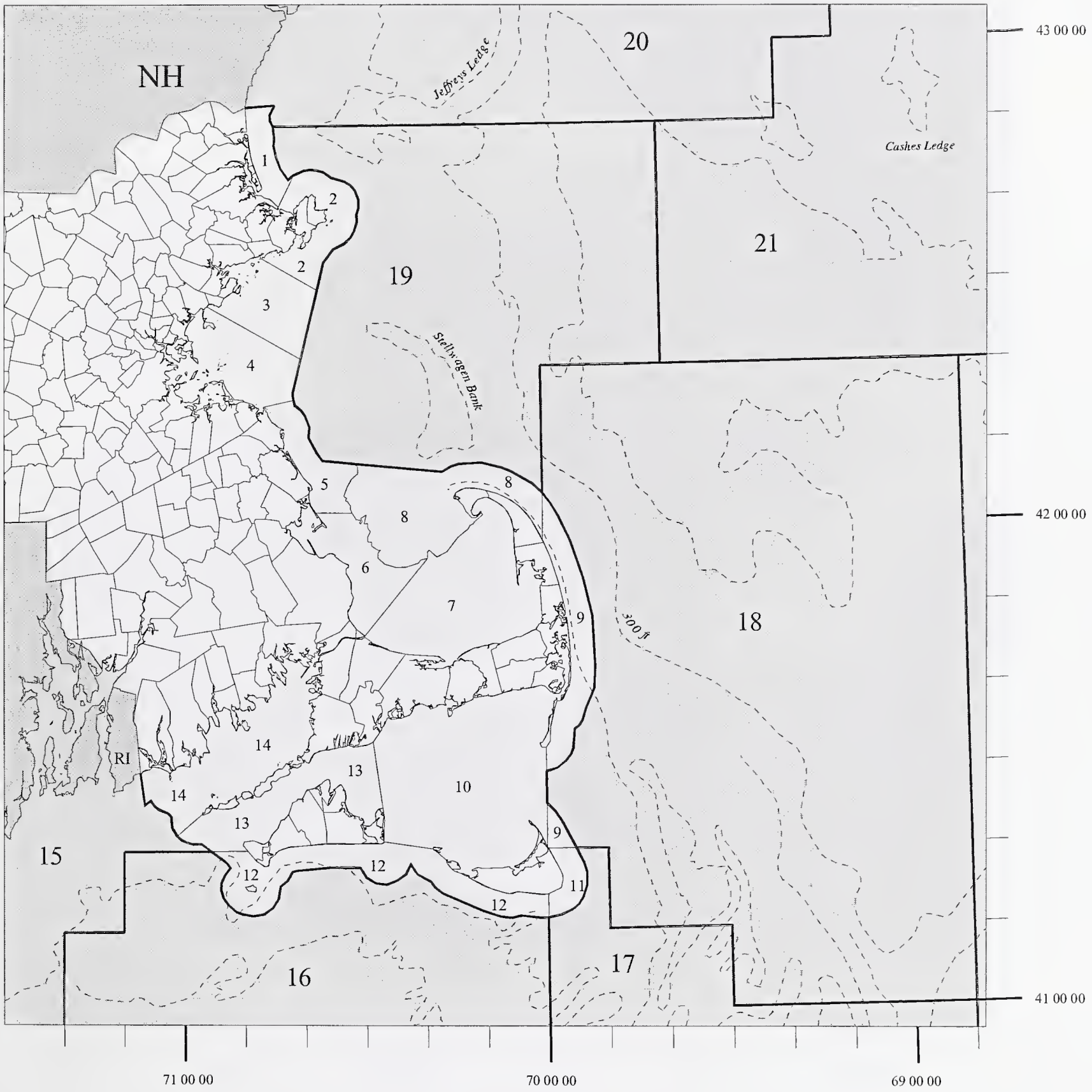
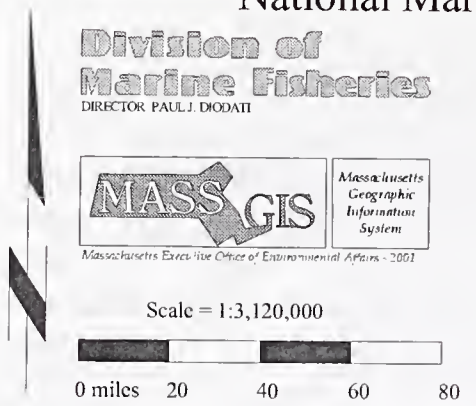


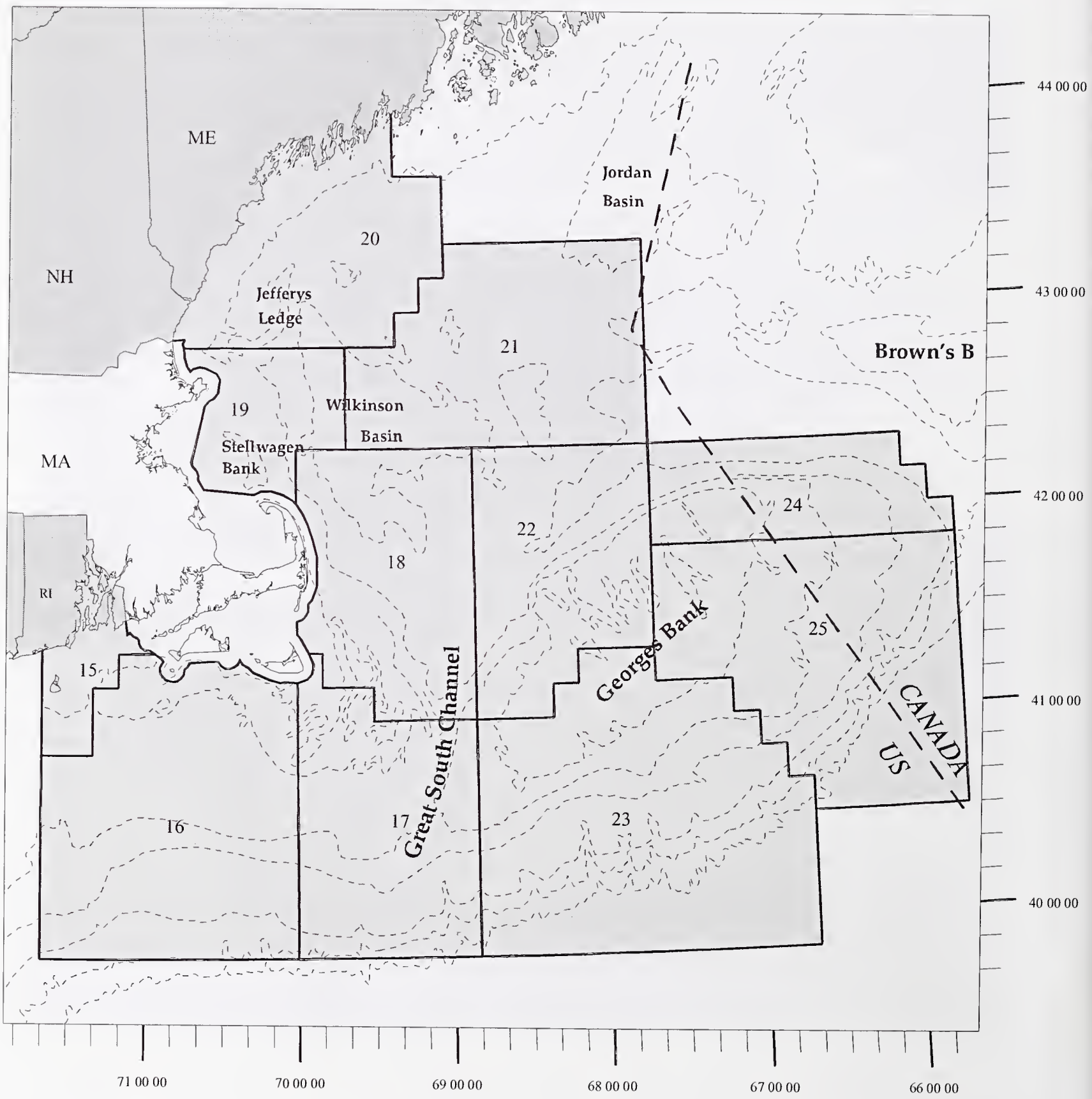
Figure 1B. 1999 Massachusetts Lobster Fishery; Statistical Reporting Map Showing Offshore Areas (which correspond to the National Marine Fisheries Service Statistical Areas)



Areas 15 through 25 are the same geographic areas as the National Marine Fisheries Service statistical areas except where the Massachusetts territorial line runs through them.

— — = Hague Line

▭ = Territorial Waters



Here is a brief definition of each lobster license type:

Coastal Commercial: Allows the holder to harvest lobster anywhere, most importantly inside territorial waters.

Offshore Commercial: Allows the holder to harvest lobster outside territorial waters only.

Seasonal Commercial: Allows the holder, if he or she is a student, to harvest lobster anywhere, but with a maximum of 25 traps and only during the months of June - September.

Non-commercial: Allows the holder to harvest lobster anywhere using SCUBA gear, a maximum of 10 traps, or a combination of both. The catch may not be sold.

Regulations promulgated by the New England Fishery Management Council in cooperation with the major lobster harvesting states of the Atlantic Coast, declared 1990 the "off-year" of a 5-year program to increase the minimum legal size from 3 3/16 in 1987 to 3 5/16 inches by January of 1992 through four 1/32 inch increases. The program was suspended at the end of 1990 and the planned increases in 1991 and 1992 were delayed pending a study of the economic impact of the program. The gauge increase program has not resumed and has been superseded by a proposed amendment to the lobster Fishery Management Plan to control fishing effort without a gauge increase.

Tables presenting number of fishermen, number of pots fished, number and value of boats used in the fishery and total landings statewide, by county and license type, and for each city and town were prepared using the catch reports submitted by commercial fishermen. In keeping with Division policy, some of the data are masked or combined to protect the confidentiality of the individual submitting the report. Data referring to the number of fishermen, number and value of gear, and number and value of boats are presented by the home port of the licensee filing the report. Pounds of lobster harvested are presented by the port of landing reported by the fishermen.

Vessel and SCUBA gear values were calculated on the basis of the fishermen's estimate of its present value and the percentage of the time it is in use specifically for lobstering. Average values were used when the information was omitted from an individual report. When fishermen reported the number of lobsters taken, rather than poundage, a conversion factor of 1.27 pounds per lobster was used to calculate poundage figures. This figure is based on information collected by the Division's Coastal Lobster Investigations Project. For information on biological (average carapace length, sex ratios, percent of egg-bearing lobster in catch etc.) and other parameters (mortality, exploitation and catch per unit of effort ratcs) contact this Project in Pocasset, MA at (508) 563-1779.

Where tables refer to county, the reader is referred to Figure 10.

ISSUED LICENSES AND REPORTING STATUS

Table 1 lists the number of commercial and recreational licenses issued in 1999, the dollar value of fees collected and the number that reported catching lobster. There were 2,164 commercial lobster licenses issued during 1999: 1,549 coastal, 526 offshore and 89 seasonal. Non-commercial licenses issued totaled 11,633; breakdown of their reporting status and landings can be found in Table 6.

As of April, 2001, a total of 95 licensed commercial lobstermen (4.4 percent) failed to file a catch report with the Division. Of the 2,069 commercial fishermen who reported, 548 or 26.5 percent claimed they did not catch any lobster during 1999. The number of coastal licenses issued continues to decline since a 1988 moratorium on the issuance of new licenses. An annual decrease of approximately 1.3 percent per year continued in 1999 driven by fishermen leaving the fishery and the Division's policy to retire half of these licenses through attrition.

The number of offshore licenses issued decreased slightly in 1999. Overall compliance with catch reporting by the offshore fleet appears to be improving. Student commercial licenses increased by approximately 8 percent over last year.

Table 1. 1999 Massachusetts Lobster Fishery; Reporting Status of Licenses Issued

License Type (Fee)	Licenses Issued	Licensing Revenue	Reported "Catching Lobster"		Reported "No Lobster Catch"		Not Reporting	
Coastal Commercial ($260)	1,549	$402,740	1,118	72%	417	27%	14	1%
Offshore Commercial ($260)	526	$136,760	348	66%	123	23%	55	10%
Seasonal (Student) Commercial ($65)	89	$5,785	55	62%	8	9%	26	29%
Non-Commercial ($40)	11,633	$465,320	6,398	81%	2,550	82%	2,685	97%
Total	13,797	$1,010,605	7,919	57%	3,098	22%	2,780	20%

Table 2. Massachusetts Commercial Lobster Fishery; Selected Licensing Information, 1995 - 1999

	1995	1996	1997	1998	**1999**	Percent Five Year Change
Coastal Licenses						
Issued	1,609	1,598	1,591	1,570	**1,549**	*-3.73%*
% Change		*-0.68*	*-0.44*	*-1.32*	***-1.34***	
"Caught Lobster"	1,190	1,179	1,162	1,161	**1,118**	
% Change		*-0.24*	*-1.01*	*1.25*	***-2.40***	
"Did Not Catch Lobster"	403	404	407	385	**417**	
% Change		*0.94*	*1.19*	*-4.14*	***9.78***	
Not Reporting	16	15	22	24	**14**	
% Change		*-5.60*	*47.31*	*10.55*	***-40.88***	
Percent Not Reporting	1.0%	0.9%	1.4%	1.5%	**0.9%**	
Offshore Licenses						
Issued	596	551	554	529	**526**	*-11.74%*
% Change		*-7.55*	*0.54*	*-4.51*	***-0.57***	
"Caught Lobster"	439	400	354	350	**348**	
% Change		*-1.44*	*-11.98*	*3.54*	***0.00***	
"Did Not Catch Lobster"	117	114	117	115	**123**	
% Change		*5.39*	*2.08*	*2.94*	***7.57***	
Not Reporting	49	37	83	64	**55**	
% Change		*-18.32*	*123.11*	*-19.25*	***-13.57***	
Percent Not Reporting		6.7%	15.0%	12.1%	**10.5%**	
Seasonal (Student) Licenses						
Issued	82	65	78	82	**89**	*8.54%*
% Change		*-20.73*	*20.00*	*5.13*	***8.54***	
"Caught Lobster"	42	40	39	41	**55**	
% Change		*20.15*	*-2.50*	*5.13*	***34.15***	
"Did Not Catch Lobster"	12	7	6	7	**8**	
% Change		*-26.41*	*-14.29*	*16.67*	***14.29***	
Not Reporting	28	18	33	34	**26**	
% Change		*-18.90*	*83.33*	*18.00*	***-23.53***	
Percent Not Reporting		27.7%	42.3%	41.5%	**29.2%**	

Note: All annual percentage changes are normalized to the number of licenses issued for each license type in each year.

LANDINGS AND VALUE

In 1999, 15,905,731 pounds of lobster were reported landed by commercial lobstermen in Massachusetts, a 20.90 percent increase from 1998. Based on an average price of $3.74 per pound, the commercial catch was valued at $59,487,434, a 24.91 percent increase from 1998. Figure 2. shows the weighted ex-vessel price for 1999 as derived from audits of lobstermen's records. The weighted average price of $3.74 rose 3.31 percent over the average ex-vessel price paid in 1998. (Weighted price means that each price is weighted by the number of pounds that were paid at that price instead of taking a flat average of all prices).

Of the 15,905,731 pounds of lobster landed commercially, 9,603,589 were reported taken within the territorial waters of the Commonwealth. In total pounds of lobster landed, Essex County continues to be ranked first, Plymouth County second and Bristol County third. See Table 3 for a breakdown of pounds landed and number of fishermen by license type and county and Table 4 for a five-year comparison of selected landings and effort statistics.

Gloucester was the number one port in total pounds landed followed by Marshfield, Fairhaven and Plymouth in that order. In total numbers of active commercial fishermen, Essex County ranked first with 535, Plymouth County second with 321 and Bristol County third with 248. Among the cities and towns of the Commonwealth, Gloucester ranked first in active fishermen followed by New Bedford, Plymouth and Marshfield in that order. See Tables 3 and 5, (the shaded areas in Table 5 refer to the top 10 cities in at least one of the two categories: pounds landed and number of fishermen).

Figure 2. 1999 Massachusetts Commercial Lobster Fishery
Weighted Ex-Vessel Price Derived from Audited Lobstermen's Records

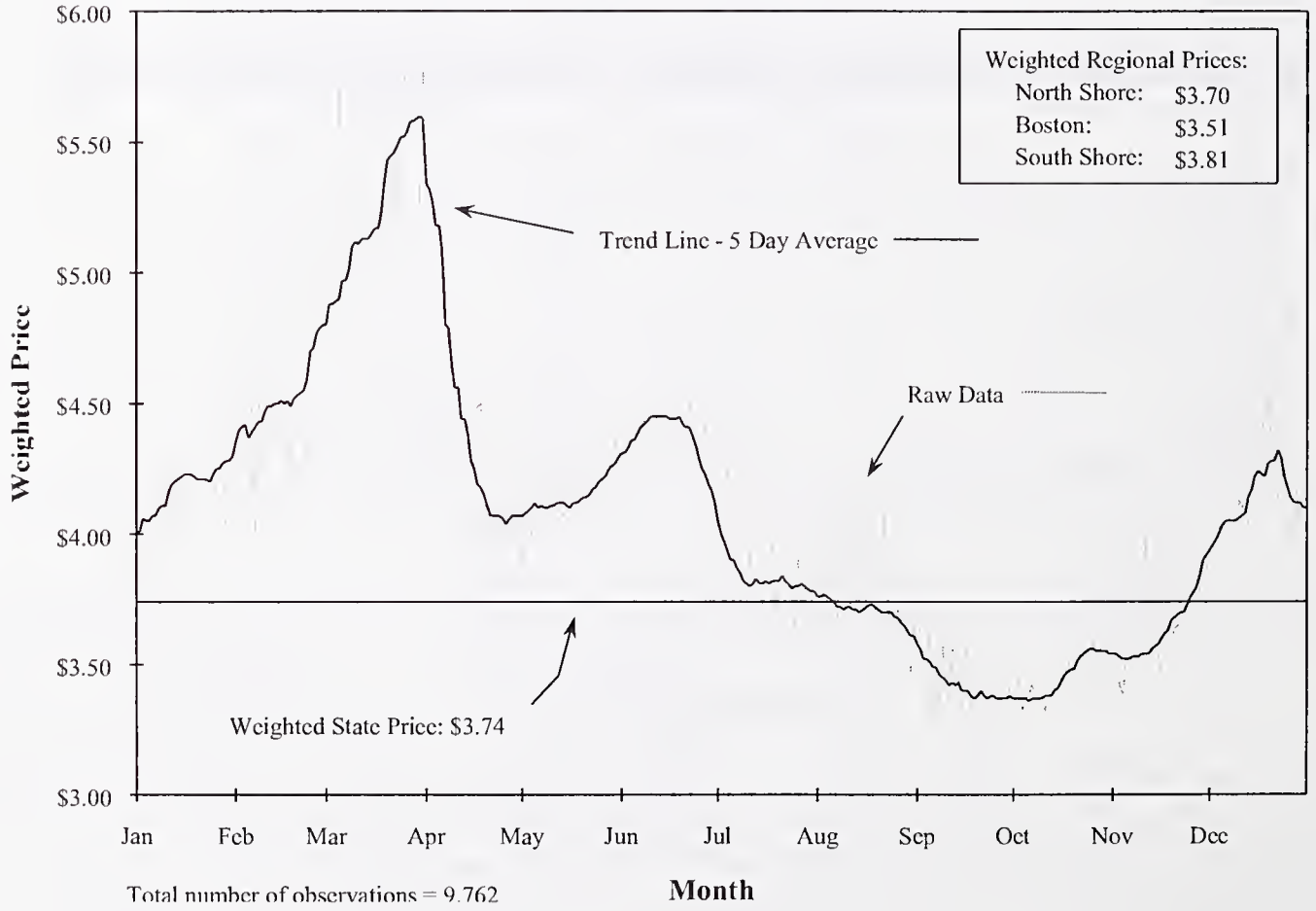


Table 3. 1999 Massachusetts Commercial Lobster Fishery; Number of Fishermen, Harvest (Lbs.) and Value of Harvest

AREA:	TERRITORIAL (Areas 1 - 14)						NON-TERRITORIAL (Areas 15 - 25)					
LICENSE TYPE:	---------- COASTAL ----------				SEASONAL		---- COASTAL -----		---- OFFSHORE ----			
GEAR TYPE:	Diver	Potman	Potman/ Diver	Trawl/ Gillnet	Potman	TOTAL* INSHORE	Potman	Trawl/ Gillnet	Potman	Trawl/ Gillnet	TOTAL* OFFSHORE	GRAND* TOTAL
-- COUNTY --												
BARNSTABLE												
Fishermen	3	137	9		10	**159**	9		7	34	**50**	**209**
Pounds	8,202	1,121,501	59,529		1,541	**1,190,773**	232,793		800,946	46,363	**1,080,214**	**2,270,987**
Value ($)	0	0	0		0	**4,453,491**	0		0	0	**4,040,000**	**8,493,491**
BRISTOL												
Fishermen		73			4	**77**	14		18	139	**172**	**248**
Pounds		479,419			988	**480,407**	15		809,566	394,045	**1,871,045**	**2,351,452**
Value ($)		0			0	**1,796,723**	0		0	0	**6,997,709**	**8,794,432**
DUKES												
Fishermen		27				**29+**	5		7		**13**	**42**
Pounds		117,569				**118,274**	79,332		80,241		**159,878**	**278,152**
Value ($)		0				**442,346**	0		0		**597,943**	**1,040,289**
ESSEX												
Fishermen		370	8	4	21	**403**	48		11	71	**132**	**535**
Pounds		3,797,378	41,559	2,184	7,695	**3,848,816**	1,683,700		360,750	152,727	**2,198,272**	**6,047,089**
Value ($)		0	0	0	0	**14,394,573**	0		0	0	**8,221,538**	**22,616,111**
NANTUCKET												
Fishermen		5				**6+**					**3+**	**9**
Pounds		6,345				**6,475**					**57,276**	**63,751**
Value ($)		0				**24,218**					**214,211**	**238,429**
NORFOLK												
Fishermen		45				**47+**					**1+**	**48**
Pounds		428,710				**445,432**					**45,988**	**491,419**
Value ($)		0				**1,665,914**					**171,994**	**1,837,908**
PLYMOUTH												
Fishermen		253	10		17	**283+**	22	4		10	**38+**	**321**
Pounds		2,762,972	45,498		4,005	**2,815,552**	715,657	23,658		4,719	**751,114**	**3,566,666**
Value ($)		0	0		0	**10,530,164**	0	0		0	**2,809,166**	**13,339,329**
SUFFOLK												
Fishermen		57				**59+**				19	**25+**	**84**
Pounds		691,770				**692,746**				57,363	**107,417**	**800,163**
Value ($)		0				**2,590,870**				0	**401,740**	**2,992,610**
*STATE TOTAL **												
Fishermen	**6**	**967**	**30**	**5**	**55**	**1,063**	**102**	**7**	**49**	**275**	**434**	**1,497**
Pounds	**9,630**	**9,405,665**	**163,537**	**4,559**	**15,084**	**9,598,476**	**3,527,931**	**25,203**	**2,058,673**	**659,396**	**6,271,203**	**15,869,679**
Value ($)	**0**	**0**	**611,630**	**17,051**	**0**	**35,898,299**	**13,194,462**	**94,259**	**7,699,436**	**2,466,142**	**23,454,300**	**59,352,599**
OUT OF STATE												
Fishermen						1+				22	23+	24
Pounds						5,113				15,379	30,939	36,052
Value ($)						19,123				0	115,712	134,834

* +Row and column totals may not equal the sum of the rows or columns due to masking of the data. Value is based on an ex-vessel price of $3.74, see Figure 2.

Table 4. Massachusetts Commercial Lobster Fishery;
Selected Landings (Lbs.) and Effort Statistics, 1995-99

	1995	1996	1997	1998	**1999**	Percent Five Year Change
Total Landings	15,949,362	15,361,045	15,092,015	13,236,091	**15,905,731**	-0.27
Percent Change		-3.69	-1.75	-12.30	**20.17**	
Total Traps Fished	482,180	495,651	489,907	505,048	**501,097**	3.92
Percent Change		2.79	-1.16	3.09	**-0.78**	
Total Value	$51,037,958	$50,077,007	$49,199,969	$47,914,649	**$59,487,434**	16.56
Percent Change		-1.88	-1.75	-2.61	**24.15**	
INSHORE (TERRITORIAL - Inside 3 Miles)						
Landings	10,040,721	9,109,902	8,434,199	7,660,274	**9,603,589**	-4.35
Percent Change		-9.27	-7.42	-9.18	**25.37**	
Value	$32,130,307	$29,698,281	$27,495,489	$27,730,192	**$35,917,423**	11.79
Percent Change		-7.57	-7.42	0.85	**29.52**	
Trap Landings	10,027,563	9,076,886	8,419,590	7,641,958	**9,589,277**	-4.37
		-9.48	-7.24	-9.24	**25.48**	
Traps Fished	358,075	366,946	351,639	368,451	**367,523**	2.64
		2.48	-4.17	4.78	**-0.25**	
Non-Trap Landings	13,158	33,016	14,609	18,316	**14,189**	7.84
(Gillnet, Diver)		150.92	-55.75	25.37	**-22.53**	
OFFSHORE (NON-TERRITORIAL - Outside 3 Miles)						
Landings	5,908,641	6,251,143	6,657,816	5,575,816	**6,302,142**	6.66
Percent Change		5.80	6.51	-16.25	**13.03**	
Value	$18,907,651	$20,378,726	$21,704,480	$20,184,454	**$23,570,011**	24.66
Percent Change		7.78	6.51	-7.00	**16.77**	
Trap Landings	4,994,645	5,331,921	6,038,239	4,925,368	**5,602,287**	12.17
		6.75	13.25	-18.43	**13.74**	
Traps Fished	124,106	128,704	138,267	136,596	**133,574**	7.63
		3.70	7.43	-1.21	**-2.21**	
Non-Trap Landings	913,996	919,222	619,577	650,448	**699,978**	-23.42
(Gillnet, Trawler)		0.57	-32.60	4.98	**7.61**	
Average Price ($) / Pound	3.2	3.26	3.26	3.62	**3.74**	
Percent Change		1.87	0.00	11.04	3.31	
Ave. Lbs. / Trap-Haul	0.7286	0.7296	0.7721	0.6667	**0.8160**	
Percent Change		0.14	5.83	-13.65	**22.39**	
Ave. Lbs. / Trap	31.15	29.07	29.51	24.88	30.32	
Percent Change		-6.69	1.52	-15.68	**21.83**	

Table 5. 1999 Massachusetts Commercial Lobster Fishery - Number of Active Commercial Fishermen and Landings by Homeport

Does Not Include Seasonal (Student) Licenses

CITY/TOWN	FISHERMEN NUMBER	FISHERMEN RANK	POUNDS INSHORE	POUNDS OFFSHORE	POUNDS TOTAL	POUNDS PERCENT	POUNDS RANK
BARNSTABLE	5	44	56,831	460,515	517,346	3.26	13
BEVERLY	**40**	**11**	**504,445**	**156,601**	**661,046**	**4.17**	**7**
BOSTON	**58**	**6**	**419,786**	**100,432**	**520,218**	**3.28**	**12**
BOURNE	7	37	24,739	0	24,739	0.16	39
CHATHAM	**45**	**8**	**187,543**	**86,181**	**273,724**	**1.73**	**18**
CHILMARK	21	20	90,315	156,867	247,183	1.56	21
COHASSET	34	15	435,600	42,310	477,910	3.01	14
DANVERS	6	43	48,244	0	48,244	0.30	33
DARTMOUTH	10	30	7,194	600	7,794	0.05	49
DENNIS	15	24	99,826	382	100,208	0.63	27
DUXBURY	8	34	61,744	0	61,744	0.39	32
EDGARTOWN	4	48	4,635	990	5,625	0.04	50
ESSEX	5	44	17,415	0	17,415	0.11	41
FAIRHAVEN	**43**	**9**	**254,016**	**691,759**	**945,775**	**5.97**	**3**
FALMOUTH	9	31	13,852	21,921	35,773	0.23	35
GLOUCESTER	**211**	**1**	**1,133,840**	**1,714,679**	**2,848,518**	**17.97**	**1**
GOSNOLD	4	48	8,065	0	8,065	0.05	47
HARWICH	9	31	14,479	85,989	100,468	0.63	26
HINGHAM	18	23	294,089	45,236	339,326	2.14	16
HULL	29	16	261,284	102,799	364,083	2.30	15
IPSWICH	15	24	34,822	0	34,822	0.22	36
KINGSTON	4	48	30,099	0	30,099	0.19	38
LYNN	5	44	44,313	45,685	89,997	0.57	29
MANCHESTER	23	19	253,127	19,876	273,003	1.72	19
MARBLEHEAD	40	11	432,997	91,533	524,530	3.31	11
MARION	3	52	8,066	0	8,066	0.05	46
MARSHFIELD	**77**	**4**	**934,862**	**271,372**	**1,206,233**	**7.61**	**2**
MATTAPOISETT	12	28	34,253	8,032	42,285	0.27	34
NAHANT	25	17	245,334	24,135	269,469	1.70	20
NANTUCKET	9	31	6,475	57,276	63,751	0.40	31
NEW BEDFORD	**151**	**2**	**153,406**	**635,270**	**788,677**	**4.97**	**6**
NEWBURY	3	52	819	800	1,619	0.01	53
NEWBURYPORT	15	24	82,452	14,477	96,929	0.61	28
OAK BLUFFS	3	52	7,863	0	7,863	0.05	48
ORLEANS-EASTHAM	21	20	109,304	17,661	126,965	0.80	25
PLYMOUTH	**90**	**3**	**836,320**	**53,290**	**889,610**	**5.61**	**4**
PROVINCETOWN	36	13	206,445	17,226	223,671	1.41	22
QUINCY	7	37	3,887	126	4,013	0.03	52
REVERE-CHELSEA-MEDFORD	12	28	203,307	6,986	210,292	1.33	24
ROCKPORT	**65**	**5**	**531,095**	**119,576**	**650,671**	**4.10**	**8**
ROWLEY	3	52	1,300	0	1,300	0.01	54
SALEM	7	37	5,339	0	5,339	0.03	51
SALISBURY	8	34	7,537	3,050	10,587	0.07	43
SANDWICH	**36**	**13**	**426,226**	**390,339**	**816,565**	**5.15**	**5**
SAUGUS	24	18	279,556	7,862	287,418	1.81	17
SCITUATE	**56**	**7**	**328,852**	**270,386**	**599,237**	**3.78**	**10**
SWAMPSCOTT	19	22	218,487	0	218,487	1.38	23
TISBURY	8	34	6,691	2,020	8,712	0.05	45
TRURO	7	37	16,949	0	16,949	0.11	42
WAREHAM	7	37	21,978	0	21,978	0.14	40
WELLFLEET	5	44	32,111	0	32,111	0.20	37
WESTPORT-SWANSEA - FALL RIVER	**41**	**10**	**64,802**	**543,416**	**608,219**	**3.84**	**9**
WEYMOUTH - BRAINTREE	7	37	5,944	3,552	9,496	0.06	44
WINTHROP	13	27	69,504	0	69,504	0.44	30
YARMOUTH	4	48	926	0	926	0.01	55
STATEWIDE TOTAL	**1,442**		**9,583,392**	**6,271,203**	**15,854,595**	**100.00**	
OUT OF STATE	24		5,113	30,939	36,052		

Shaded areas denote towns which rank in the top 10 for number of fishermen or total landings or both.

RECREATIONAL LOBSTER FISHERY

Recreational statistics are shown in Table 6. Licenses issued in 1999 totaled 11,633, up slightly from 1998, with 8,948 or 76.92% percent, reporting that they fished for lobster. In general, reporting rates dropped slightly and the percentage of license holders fishing decreased. Landings increased by approximately 1.77% percent from 1998. The number of traps fished in the recreational fishery decreased in 1999. The number of hours dived has continued to decline from 1993 levels. Landings amounted to 335,275 pounds or only 2.11 percent of the commercial landings. It should be noted that those individuals who did not report, were not able to renew their recreational license for 2000. Twenty-three percent of the licenses in the recreational fishery have turned over in the past year; historically, this turn-over rate is not unusual.

Table 6. 1999 Massachusetts Recreational Lobster Fishery; License Status and Harvest Information

License Type:	Diver	Diver/Pot	Potman	Total	Percent
1) Number of Licenses Issued in 1999	3,846	3,245	4,542	**11,633**	
2) Number that Reported	2,872	2,575	3,501	**8,948**	76.92%
a) Total Number That Fished	2,017	1,816	2,565	**6,398**	55.00%
b) Total Number That Did Not Fish	855	759	936	**2,550**	21.92%
3) Number That Did Not Report	974	670	1,041	**2,685**	23.08%
					% Change
4) Number of Lobsters Reported Landed	45,834	73,819	144,343	**263,996**	from 1998
Pounds of Lobsters (Calculated)*	58,209	93,750	183,316	**335,275**	1.77%
5) Number Pots Fished		6,312	19,437	**25,749**	-9.87%
6) Number of Hours Diving	30,869	23,037		**53,906**	-4.08%

* Based on 1.27 Pounds per Lobster.

TERRITORIAL FISHERY

Territorial landings by commercial fishermen were concentrated in the months of July through November when 75 percent of the yearly harvest was landed. A typical yearly scenario is for catches to increase sometime in mid to late July and peak in August and September. Water temperatures rise during this time inducing growth and subsequent recruitment of previously sub-legal lobsters into the legal size category. The bulk of 1999 landings were distributed July through November with concentrated landings in September, October and November. Landings in 1998 were similar to 1999 with the high concentrations in September, October and November. See Table 7 and Figure 3.

The greatest harvest of lobster from territorial waters was from the Boston Harbor vicinity (including the outlying areas which comprise Area 4 on Figure 1A), where approximately 24.04% of the state's territorial harvest was caught.

Table 7. 1999 Massachusetts Commercial Lobster Fishery
Percent Monthly Territorial Harvest by License Type

Month	Coastal	Seasonal
January	3.11	0.00
February	1.21	0.00
March	0.74	0.00
April	1.88	0.00
May	3.51	0.00
June	6.26	14.72
July	11.09	40.03
August	12.71	29.32
September	16.45	15.93
October	18.86	0.00
November	15.65	0.00
December	8.53	0.00
Total	100.00	100.00

Figure 3. 1999 Massachusetts Commercial Lobster Fishery
Total Monthly Territorial Harvest for Coastal and Seasonal License Types

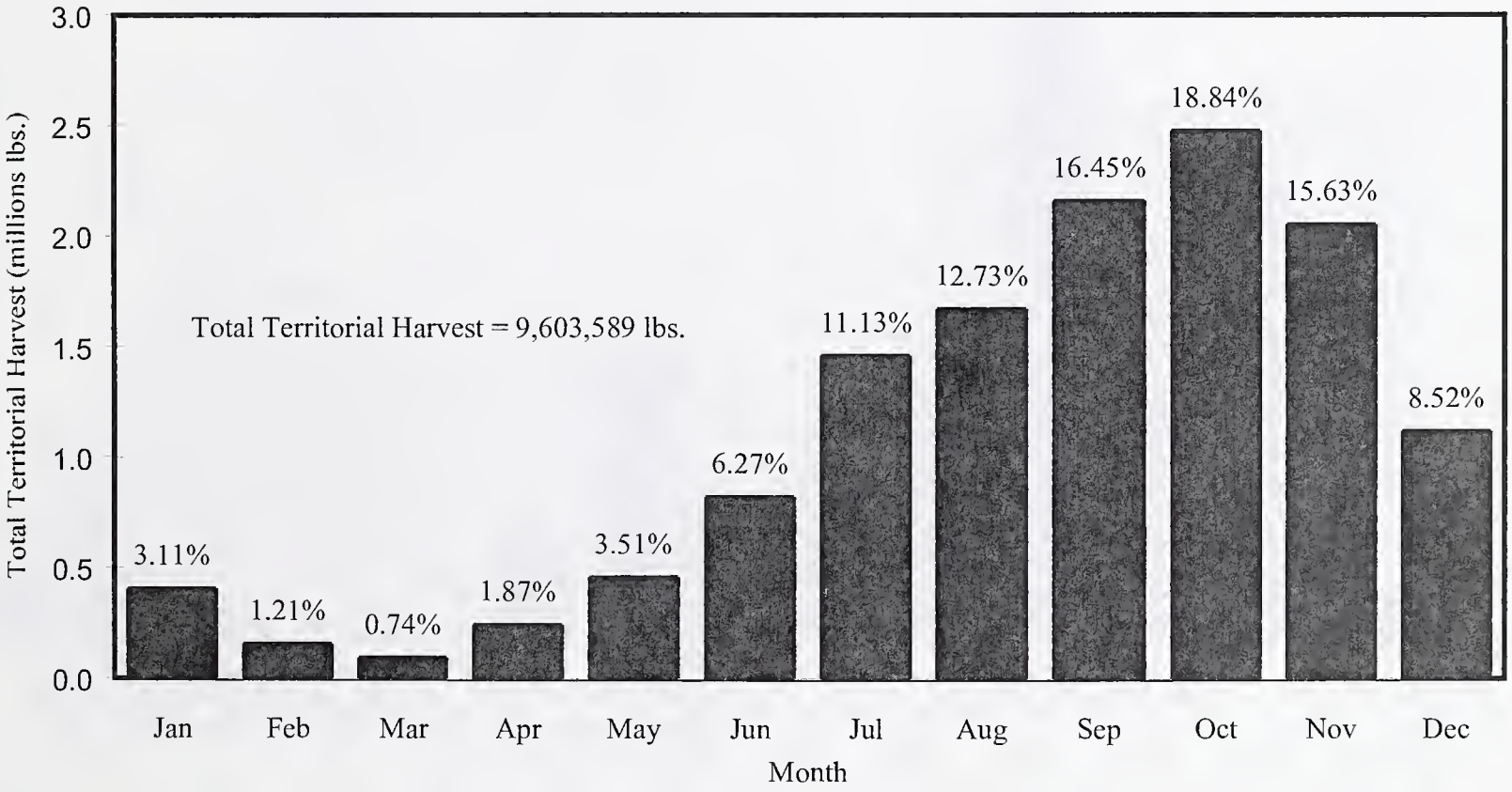


Table 8. 1999 Massachusetts Commercial Lobster Fishery
Percent Territorial Harvest by Area Fished by License Type

Area Fished	Coastal	Seasonal
1	1.85	2.89
2	17.05	41.19
3	13.12	6.65
4	24.07	6.03
5	9.60	5.41
6	7.53	16.35
7	5.42	5.76
8	10.39	0.00
9	3.38	0.00
10	0.39	1.44
11	0.01	0.00
12	1.48	0.00
13	2.84	7.46
14	2.87	6.82
Total Pounds	9,588,505	14,961

Territorial landings were up 25.51 percent in 1999. See Figure 1A for the map of fishing areas and Figure 4 and Table 8 for a complcte breakdown by area for each license type and month.

Offshore license landings are not shown in Figures 3 and 4 because license holders of this type cannot harvest lobsters within territorial waters. Offshore

landings are more evenly distributed during the ycar with offshore potmen landings peaking in autumn and mobile gear landings peaking in the winter months. Figure 5 shows the distribution of all lobster landings by statistical reporting area.

Figure 4. 1999 Massachusctts Commercial Lobster Fishery
Total Territorial Harvest for Coastal and Seasonal License Types by Area Fished

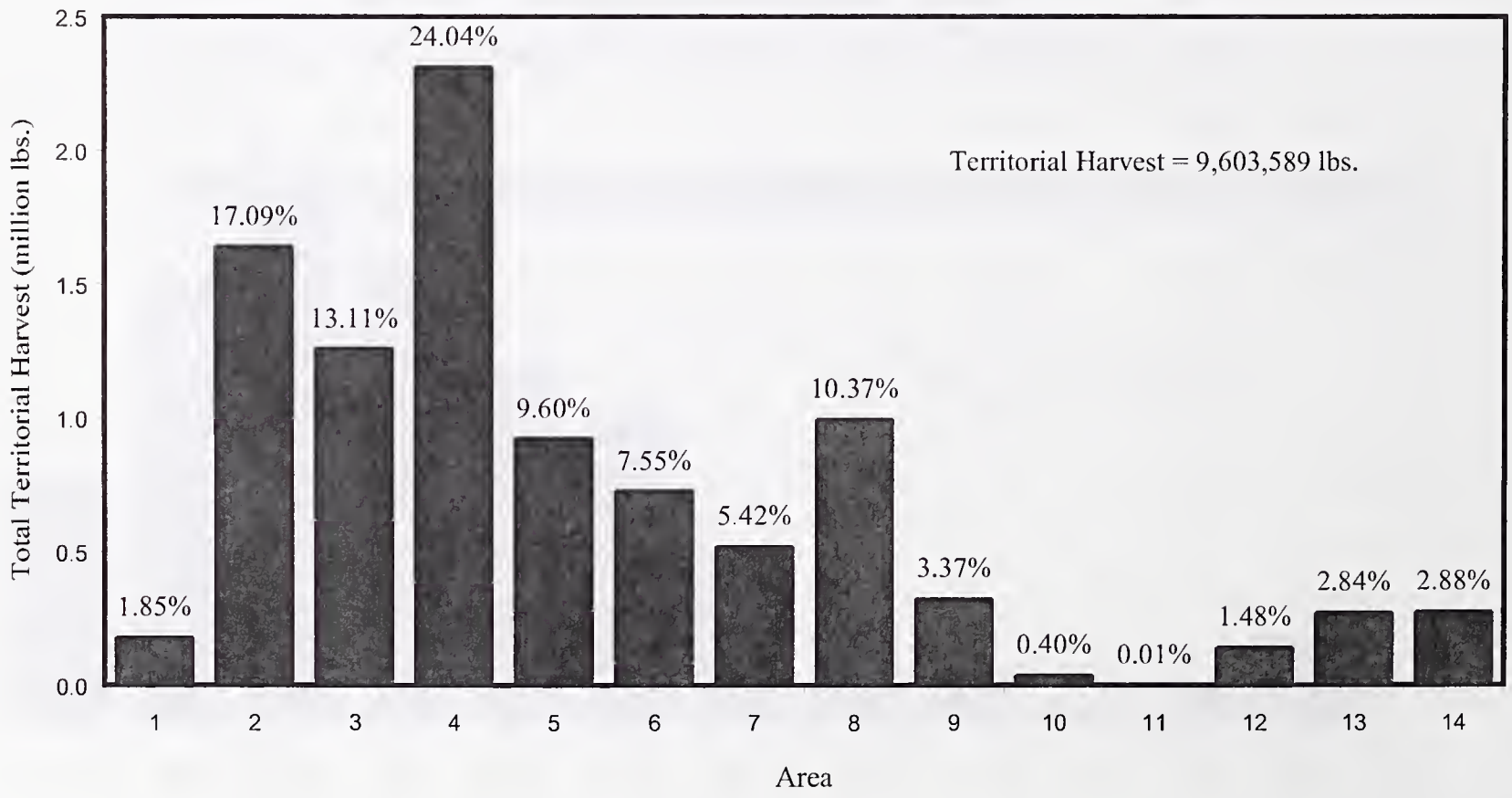
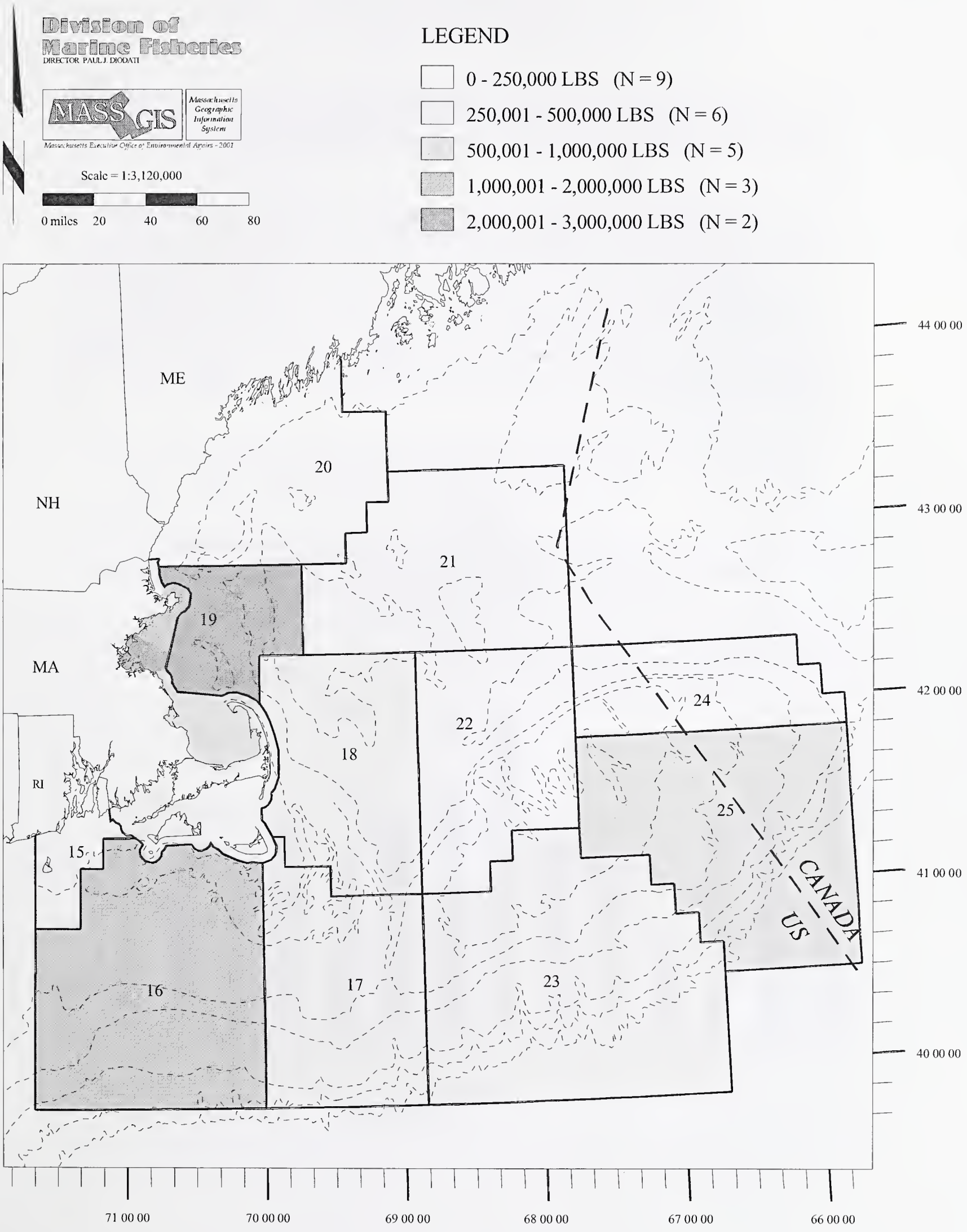


Figure 5. 1999 Massachusetts Lobster Fishery; Landings by Statistical Reporting Area - (See Figures 1A & 1B for References to Reporting Areas)



CATCH RATES

The average catch per trap haul for coastal lobstermen was .8160 pounds, an increase from 1998. For traps fished one set-over day the average was, 1.0111; for those fished two days, 0.6493, for three days, 0.7260, and for four days, 0.7584. See Figure 6 for catch effort by set-over day.

Figures 7 and 8 show the average catch per trap-haul - set-over day for area fished and month, where set-over day is factored into the effort. The average catch per trap haul - set-over day for 1999 was .1655, a 1.66 percent decrease from 1998 and a sixteen percent decrease from 1995. Overall these figures should be categorized as "estimates" since, in many cases, fishermen will estimate the number of traps hauled per trip for each month. If a fisherman leaves this information blank, the catch report is returned for corrections. If the combination of maximum traps, set-over days, average traps hauled per trip and number of trips per month is out of range for a particular month, the information is interpolated by Division statistics personnel and then factored into the analysis.

Figure 6. 1999 Massachusetts Commercial Lobster Fishery
Catch per Unit of Effort by Set-Over Day for Coastal Potmen and All Potmen

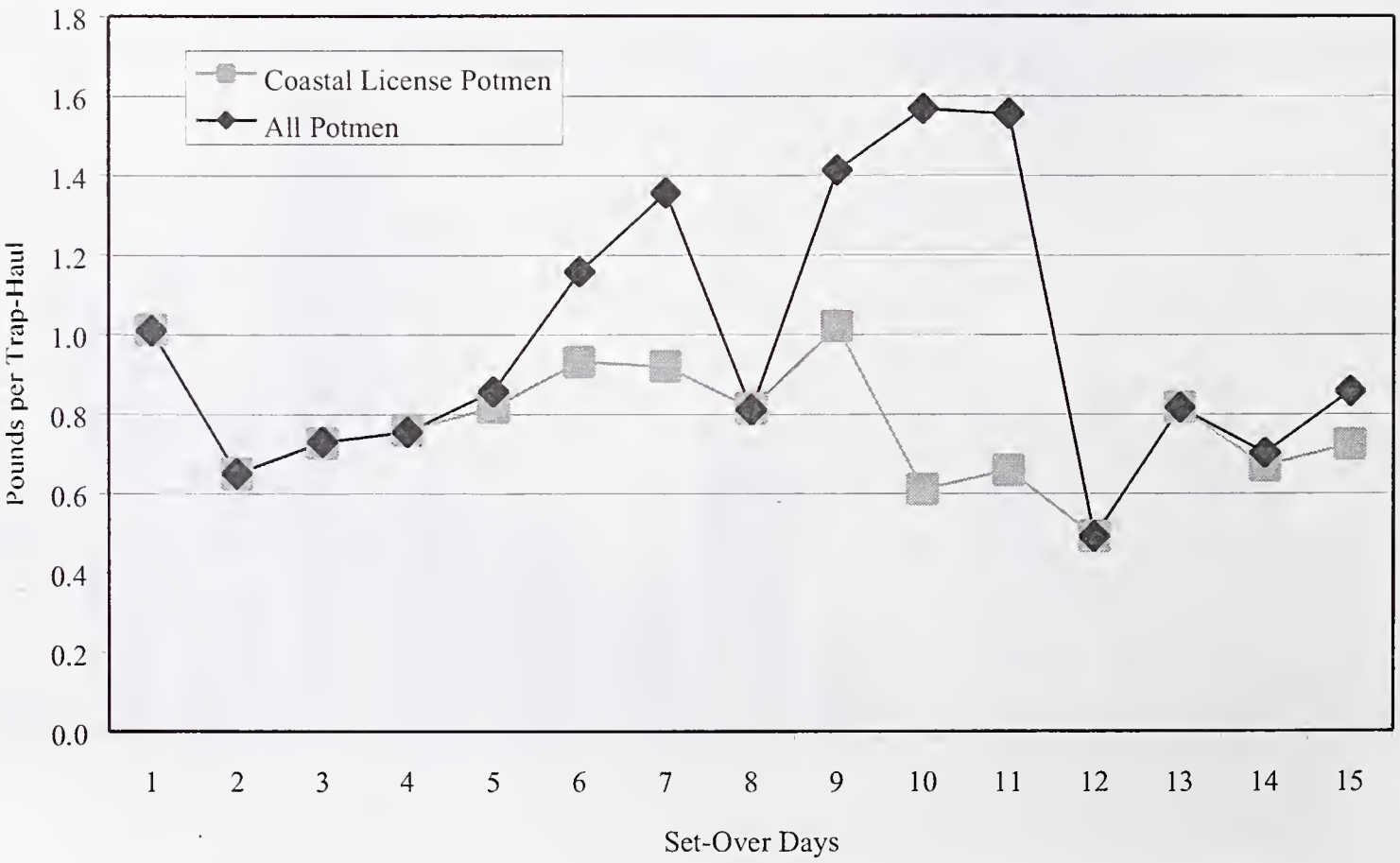


Figure 7. 1999 Massachusetts Commercial Lobster Fishery
Catch per Unit of Effort for Coastal and All Potman by Month

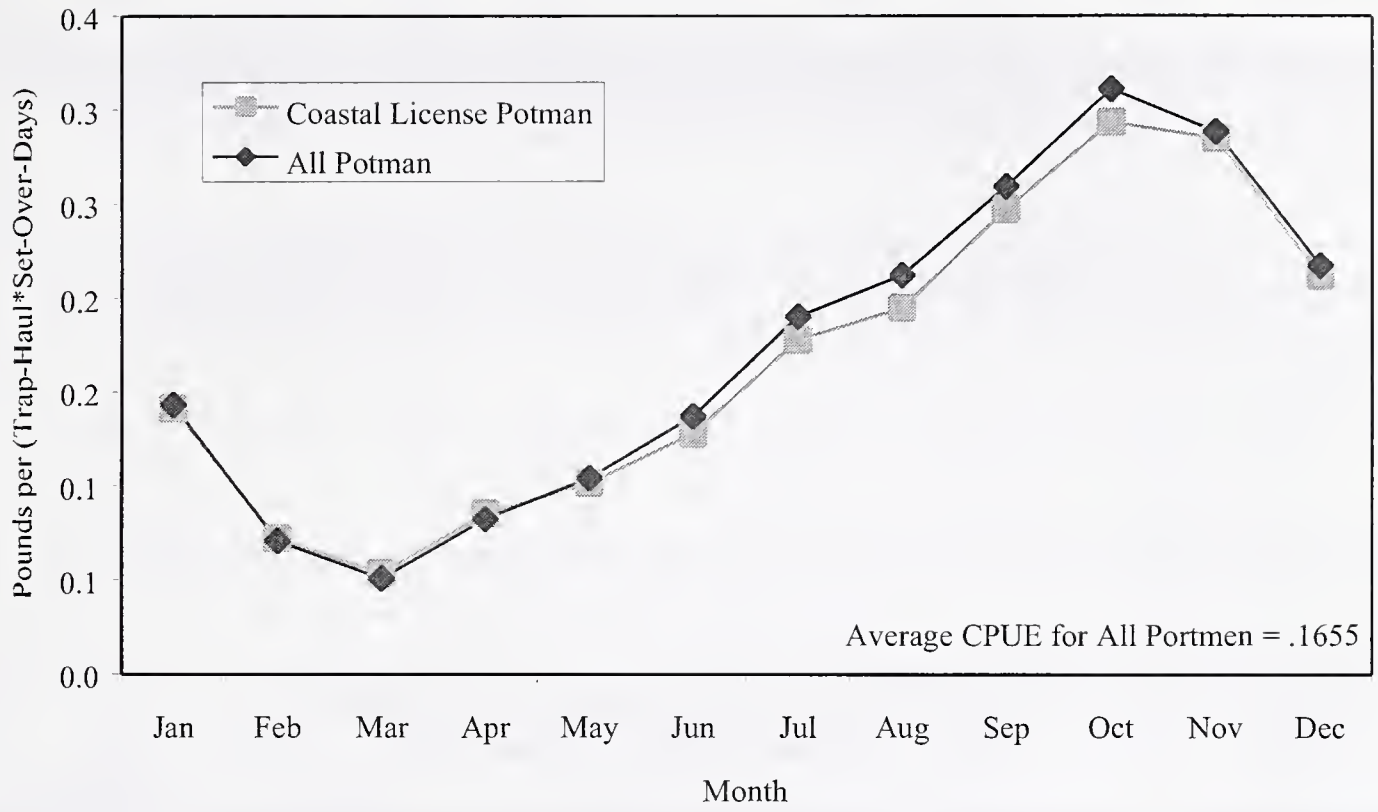
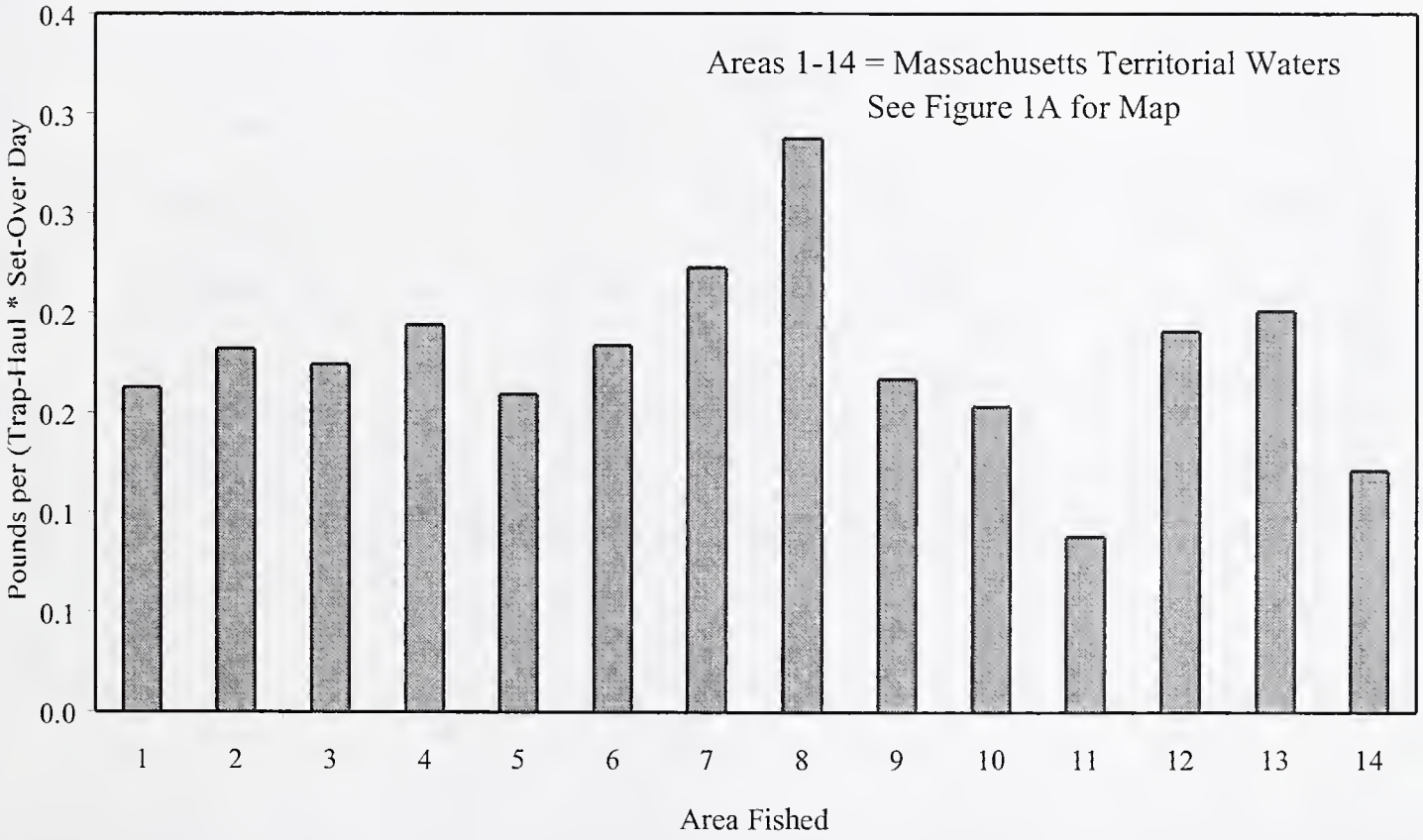


Figure 8. 1999 Massachusetts Commercial Lobster Fishery
Catch per Unit of Effort for All License Types by Area Fished



FISHING GEAR, VESSELS AND VALUE

In the commercial fishery, traps were valued at $29,904,840, diving gear at $0 and power and non-power boats at $36,815 yielding a total gear value of $52,992,195. Combined with the ex-vessel value of lobster sold, $59,487,434 this gives a total fishery value of $141,578,810. See Tables 9, 10 and 11.

Overall, 89.14% of the traps fished in the commercial fishery were wire framed, with 10.37% being wooden framed and approximately 0.48% categorized as "other". Average value (including warp and buoy) ranged anywhere from $40.78 to $117.16 with an average value of $59.79. See Table 9.

Table 9. 1999 Massachusetts Commercial Lobster Fishery
Trap Types Fished and Value by License Type

	Coastal	Offshore	Seasonal	Total Trap Type	Percent of Total
Wooden Framed Traps	47,842	3,975	59	**51,876**	10.37%
Value	$2,757,468	$440,375	$3,015	**$3,200,857.90**	
Value/Trap	$57.64	$110.79	$51.10	**$61.70**	
Wire Framed Traps	405,229	39,514	1,084	**445,826**	89.14%
Value	$23,127,317	$3,348,673	$44,210	**$26,520,200**	
Value/Trap	$57.07	$84.75	$40.78	**$59.49**	
Other Trap Types	1,406	1,018	0	**2,424**	0.48%
Value	$64,570	$119,213	$0.00	**$183,783**	
Value/Trap	$45.92	$117.16	$0.00	**$75.83**	
Total for License Type	**454,477**	**44,506**	**1,143**	**500,126**	
Value	**$25,949,355**	**$3,908,260**	**$47,225**	**$29,904,840**	
Value/Trap	**$57.10**	**$87.81**	**$41.32**	**$59.79**	

Value of trap includes warp and buoy. These figures include out-of-state fishermen.

Table 10. 1999 Massachusetts Commercial Lobster Fishery; Number of Fishing Vessels and Pots Fished

AREA:	TERRITORIAL (Areas 1-14)						NON-TERRITORIAL (Areas 15 - 25)					
LICENSE TYPE:	---------- COASTAL ----------				SEASONAL		--- COASTAL ---		--- OFFSHORE ---			
GEAR TYPE:	Diver	Potman	Potman/ Diver	Trawl/ Gillnet	(Student) Potman	TOTAL TERRITORIAL	Potman	Trawl/ Gillnet	Potman	Trawl/ Gillnet	TOTAL NON-TERRITORIAL	GRAND TOTAL
-- COUNTY --												
BARNSTABLE												
Pots Fished	0	50,502	3,285	0	208	**53,995**	6,060	0	10,865	0	**16,925**	**70,920**
Power Boat	3	154	11	0	10	**178**	10	0	7	32	**49**	**227**
Non Power Boat	1	33	2	0	0	**36**	3	0	1	0	**4**	**40**
BRISTOL												
Pots Fished	0	18,516	0	0	85	**0**	10,618	0	19,015	0	**29,633**	**29,633**
Power Boat	0	74	0	0	2	**76**	15	0	18	110	**143**	**219**
Non Power Boat	0	2	0	0	0	**2**	0	0	0	0	**0**	**2**
DUKES												
Pots Fished	0	5,789	0	0	50	**5,839**	1,603	0	3,951	0	**5,554**	**11,393**
Power Boat	0	27	0	0	2	**29**	7	0	7	1	**15**	**44**
Non Power Boat	0	3	0	0	0	**3**	1	0	0	0	**1**	**4**
ESSEX												
Pots Fished	0	136,141	1,736	0	430	**138,307**	43,138	0	8,100	0	**51,238**	**189,545**
Power Boat	0	397	10	3	20	**430**	51	2	11	56	**120**	**550**
Non Power Boat	0	83	1	0	0	**84**	4	0	0	0	**4**	**88**
NANTUCKET												
Pots Fished	0	791	30	0		**821**	954	0	100	0	**1,054**	**1,875**
Power Boat	0	7	1	0	0	**8**	1	0	1	1	**3**	**11**
Non Power Boat	0	0	0	0		**0**					**0**	**0**
NORFOLK												
Pots Fished	0	14,425	600	0	0	**15,025**	4,075	0	0	0	**4,075**	**19,100**
Power Boat	1	50	2	0	0	**53**	1	0	0	0	**1**	**54**
Non Power Boat	0	17	0	0	0	**17**						**17**
PLYMOUTH												
Pots Fished	0	105,504	2,963	0	355	**108,822**	18,827	0	305	0	**19,132**	**127,954**
Power Boat	2	289	12	1	19	**323**	28	4	2	9	**43**	**366**
Non Power Boat	0	63	2	0	2	**67**	3	0	0	0	**3**	**70**
SUFFOLK												
Pots Fished	0	25,793	100		15	**25,908**	3,768	0	570	0	**4,338**	**4,338**
Power Boat	0	62	1	0	1	**64**	2	1	3	18	**24**	**25,932**
Non Power Boat	0	5	0	0	0	**5**	0	0	0	0	**0**	**64**
STATE TOTAL												
Pots Fished	**0**	**357,461**	**8,714**	**0**	**1,143**	**348,717**	**89,043**	**0**	**42,906**	**0**	**131,949**	**480,666**
Power Boat	**6**	**1,060**	**37**	**4**	**54**	**1,161**	**115**	**7**	**49**	**227**	**398**	**1,559**
Non Power Boat	**1**	**206**	**5**	**0**	**2**	**214**	**11**	**0**	**1**	**0**	**12**	**226**
OUT OF STATE												
Pots Fished	0	230	0	0	0	230	0	1,600	0	0	1,600	1,830
Power Boat	0	1	0	0	0	1	0	0	1	21	22	23
Non Power Boat	0	1	0	0	0	1	0	0	0	0	0	1

Table 11. 1999 Massachusetts Commercial Lobster Fishery: Value of Fishing Vessels and Diving Gear

AREA:	TERRITORIAL (Areas 1-14)						NON-TERRITORIAL (Areas 15 - 25)					
LICENSE TYPE:	---------- COASTAL ----------				SEASONAL		--- COASTAL ---		--- OFFSHORE ---			
GEAR TYPE:	Diver	Potman	Potman/ Diver	Trawl/ Gillnet	(Student) Potman	TOTAL TERRITORIAL	Potman	Trawl/ Gillnet	Potman	Trawl/ Gillnet	TOTAL NON-TERRITORIAL	GRAND TOTAL
-- COUNTY --												
BARNSTABLE												
Diving Gear	6,700	0	9,310	0	0	**16,010**	0	0	0	0	0	**16,010**
Power Boat	51,200	4,861,769	444,850	0	43,900	**5,401,719**	837,030	0	2,181,000	112,150	3,130,180	**8,531,899**
Non Power Boat	400	11,541	408	0	0	**12,349**	775	0	2,000	0	2,775	**15,124**
BRISTOL												
Diving Gear	0		0	0	0	**0**	0	0	0	0	0	**0**
Power Boat	0	2,207,300	0	0	3,700	**2,211,000**	1,296,300	0	1,935,463	863,450	4,095,213	**6,306,213**
Non Power Boat	0	190	0	0	0	**190**	0	0	0	0	0	**190**
DUKES												
Diving Gear	0		0	0	0	**0**	0	0	0	0	0	**0**
Power Boat	0	848,240	0	0	6,500	**854,740**	165,850	0	132,750	2,000	300,600	**1,155,340**
Non Power Boat	0	575	0	0	0	**575**	225	0	0	0	225	**800**
ESSEX												
Diving Gear	0	0	6,940	0	0	**6,940**	0	0	0	0	0	**6,940**
Power Boat	0	11,451,260	139,830	43,000	61,325	**11,695,415**	4,553,249	4,003	1,169,350	515,300	6,241,902	**17,937,317**
Non Power Boat	0	41,148	150	0	0	**41,298**	1,700	0	0	0	1,700	**42,998**
NANTUCKET												
Diving Gear	0	0	3,600	0	0	**3,600**	0	0	0	0	0	**3,600**
Power Boat	0	115,300	3,600	0	0	**118,900**	140,000	0	12,000	20,000	172,000	**290,900**
Non Power Boat	0	0	0	0	0	**0**	0	0	0	0	0	**0**
NORFOLK												
Diving Gear	1,500	0	15		0	**1,515**	0	0	0	0	0	**1,515**
Power Boat	7,500	1,657,370	53,000	0	0	**1,717,870**	250,000	0	0	0	250,000	**1,967,870**
Non Power Boat	0	6,490	0		0	**6,490**	0	0	0	0	0	**6,490**
PLYMOUTH												**0**
Diving Gear	5,400	0	2,950	0	0	**8,350**	0	0	0	0	0	**8,350**
Power Boat	23,000	8,723,530	208,750	10,000	36,600	**9,001,880**	1,707,050	65,600	30,000	38,200	1,840,850	**10,842,730**
Non Power Boat	0	38,869	1,200	0	230	**40,299**	1,700	0	0	0	1,700	**41,999**
SUFFOLK												
Diving Gear	0	0	400		0	**400**	0	0	0	0	0	**400**
Power Boat	0	2,113,925	20,000		500	**2,134,425**	50,250	800	205,000	2,797,500	3,053,550	**5,187,975**
Non Power Boat	0	3,800	0		0	**3,800**	0	0	0	0	0	**3,800**
STATE TOTAL												
Diving Gear	**13,600**	**0**	**23,215**	**0**	**0**	**36,815**	**0**	**0**	**0**	**0**	**0**	**36,815**
Power Boat	**81,700**	**31,978,694**	**870,030**	**53,000**	**152,525**	**33,135,949**	**8,999,729**	**70,403**	**5,665,563**	**4,348,600**	**19,084,295**	**52,220,244**
Non Power Boat	**400**	**102,613**	**1,758**	**0**	**230**	**105,001**	**4,400**	**0**	**2,000**	**0**	**6,400**	**111,401**
OUT OF STATE												
Diving Gear	0	0	0	0	0	0	0	0	0	0	0	0
Power Boat	0	50,000	0	0	0	50,000	0	0	320,000	290,350	610,350	660,350
Non Power Boat	0	200	0	0	0	200	0	0	0	0	0	200

VALIDITY OF DATA

Each year 150 coastal license holders are selected for audit and asked to submit the records they used to complete the harvest portion of their catch report. The Division does this to help estimate the amount of error involved in the reporting process. Selection is done randomly except when fishermen fail an audit. In these cases, they are audited again the following year. The audit was first instituted in 1977 for the 1976 catch reports. Over the last five years the lobstermen selected for audit reported landing 7,913,783 pounds. The audit of their records revealed a harvest of 7,921,421 pounds or a difference of -0.10 percent.

Last year the fishermen selected for audit reported harvesting 2,024,520 pounds of lobster on their 1999 catch reports. The audit of actual records showed total landings of 2,001,511 pounds, a difference of 23,009 pounds or 1.13 percent. None of the randomly selected fishermen have yet to respond to the audit request. Figure 9 shows the distribution of the percent difference between the selected fishermen's reported catch and their audited records. In general, reported landings are very well documented by dealer receipts and/or personal records, especially by the so-called "high-liners" in the fishery. Most of the lobstermen have had licenses for several years and know what is required in terms of reporting their fishing activities and have been informed of the value of accurate reporting in the development of management plans. They also know that their reported information is kept strictly confidential and published only in aggregate form. These factors all contribute to a conscientious and responsible reporting constituency.

Figure 9. Massachusetts Commercial Lobster Fishery
Frequency Distribution of the Percent Difference Between
Fishermen's Reported Catch and Their Audited Records

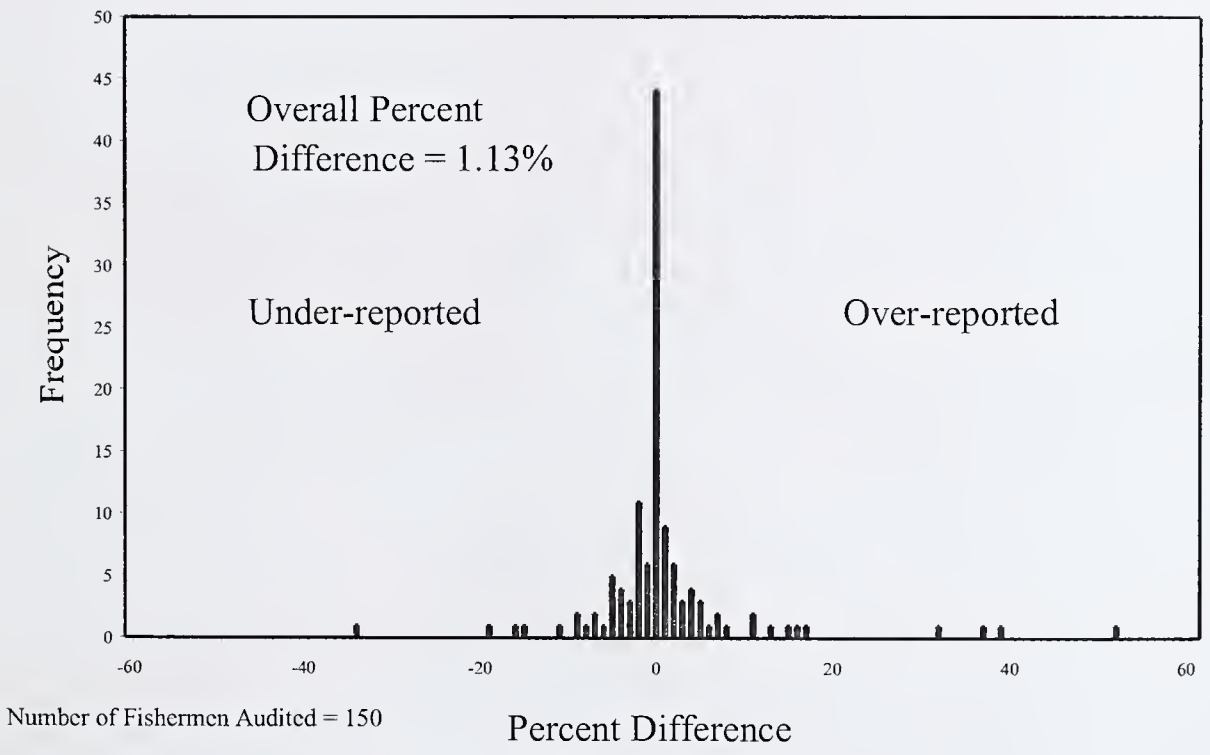
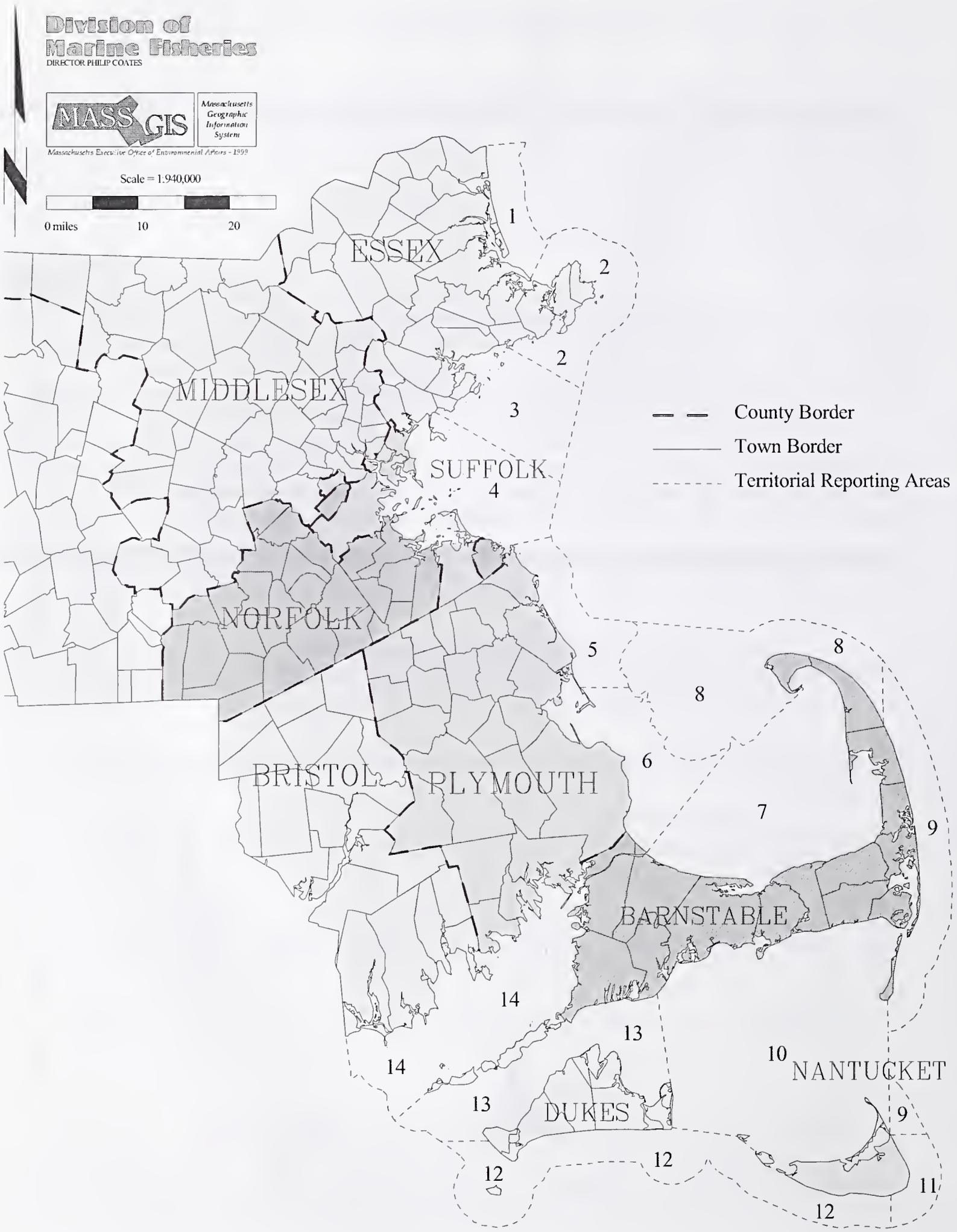



Figure 10. Coastal Map of Massachusetts Showing County Boundaries